SECTION 1. IDENTIFICATION

Product name : ALCIAN BLUE FOR PAS
Mat.-No./ Genisys-No. : 05279194001

Manufacturer or supplier’s details
Company name of supplier : Roche Diagnostics
Address : 9115 Hague Road
46250 Indianapolis IN
Telephone : 1-800-428-5074
Emergency telephone: In case of emergencies: CHEMTREC
Telephone : 1-800-424-9300 (U.S. or Canada)
1-703-527-3887 (International)

Recommended use of the chemical and restrictions on use
Restrictions on use : For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Skin irritation : Category 2
Serious eye damage : Category 1

GHS Label element
Hazard pictograms :

Signal Word : Danger
Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary Statements : Prevention:
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Substance name: Alcian Blue Stain / for PAS

Hazardous ingredients:
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td>Alcian Blue</td>
<td>75881-23-1</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.

If inhaled: Move to fresh air. Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

In case of skin contact: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed: Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital. Rinse mouth with water.

Most important symptoms and effects, both acute and: Causes skin irritation. Causes serious eye damage.
delayed

Notes to physician: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: No hazardous combustion products are known

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Use neutralizing agents.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the ap-
application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
To prevent leaks or spillages from spreading, provide a suitable liquid retention system.

Conditions for safe storage:
Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

Technical measures/Precautions:
See label, package insert or internal guidelines

Materials to avoid:
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>TWA</td>
<td>10 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm, 25 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST</td>
<td>15 ppm, 37 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm, 25 mg/m³</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm, 25 mg/m³</td>
<td>OSHA P0</td>
</tr>
<tr>
<td>Alcian Blue</td>
<td>75881-23-1</td>
<td>TWA</td>
<td>1 mg/m³ (Copper)</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>

Engineering measures:
No data available

Personal protective equipment

Respiratory protection:
In the case of vapor formation use a respirator with an approved filter.

Hand protection

Material:
Nitrile rubber

Remarks:
Wear appropriate protective gloves to prevent skin contact.
Replace torn or punctured gloves promptly.

Eye protection:
Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection: Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: blue
Odor: vinegar-like
Odor Threshold: No data available
pH: 2.5, acidic
Melting point/range: No data available
Boiling point/boiling range: No data available
Flash point: does not flash
Evaporation rate: No data available
Flammability (solid, gas): The product is not flammable.
Upper explosion limit: No data available
Lower explosion limit: No data available
Vapor pressure: No data available
Relative vapor density: No data available
Relative density: No data available
Solubility(ies)
Water solubility: completely miscible
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Autoignition temperature: No data available
Decomposition temperature: Hazardous decomposition products formed under fire conditions.
Viscosity
Viscosity, dynamic: No data available
Viscosity, kinematic : No data available
Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
No decomposition if stored and applied as directed.
Conditions to avoid : Heat, flames and sparks.
Incompatible materials : Acids and bases
Phosphorus compounds
Acetic anhydride
Amines
Peroxides
Sulfur compounds
Alcohol

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method
Acute inhalation toxicity : Acute toxicity estimate: 23333 ppm
Exposure time: 4 h
Test atmosphere: gas
Method: Calculation method
Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:
Acetic acid:
Acute oral toxicity : LD50 Oral (Rat): 3,310 mg/kg
Acute inhalation toxicity : LC50 (Mouse): 5620 ppm
Exposure time: 1 h

Acute dermal toxicity: LD50 Dermal (Rabbit): 1,115 mg/kg

**Skin corrosion/irritation**
Causes skin irritation.

**Product:**
Remarks: May cause skin irritation in susceptible persons.

**Ingredients:**
**Acetic acid:**
Result: Causes severe burns.

**Alcian Blue:**
Remarks: This information is not available.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Product:**
Remarks: May cause irreversible eye damage.

**Ingredients:**
**Alcian Blue:**
Remarks: This information is not available.

**Respiratory or skin sensitization**
Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

**Germ cell mutagenicity**
Not classified based on available information.

**Ingredients:**
**Acetic acid:**
Genotoxicity in vitro: Test Type: Ames test
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative
Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vitro: Method: OECD Test Guideline 473
Remarks: In vitro tests did not show mutagenic effects

Germ cell mutagenicity - Assessment: Not mutagenic in Ames Test.

**Carcinogenicity**
Not classified based on available information.
**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

Product:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Ingredients:
Alcian Blue:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure
Not classified based on available information.

Product:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Ingredients:
Alcian Blue:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity
Not classified based on available information.

Ingredients:
Alcian Blue:
No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:
Ecotoxicology Assessment: Toxicity Data on Soil: Not expected to adsorb on soil.
Other organisms relevant to: No data available
the environment

**Ingredients:**

**Acetic acid:**

Toxicity to fish:
- LC50 (Leuciscus idus (Golden orfe)): 410 mg/l
  Exposure time: 48 h
- NOEC (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203
- LC50 (Oncorhynchus mykiss (rainbow trout)): 160 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 203
- LC100 (Oncorhynchus mykiss (rainbow trout)): 500 mg/l
  Exposure time: 48 h
- LC0 (Oncorhynchus mykiss (rainbow trout)): 50 mg/l
  Exposure time: 48 h
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 75 mg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- EC50 (Daphnia magna (Water flea)): 95 mg/l
  Exposure time: 24 h
- EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202

**Alcian Blue:**

Ecotoxicology Assessment

Acute aquatic toxicity: This product has no known ecotoxicological effects.

Chronic aquatic toxicity: This product has no known ecotoxicological effects.

Toxicity Data on Soil: Not expected to adsorb on soil.

Other organisms relevant to the environment: No data available

**Persistence and degradability**

**Ingredients:**

**Acetic acid:**

Biodegradability:
- Zahn-Wellens Test
  Concentration: 1,250 mg/l
  Result: Readily biodegradable.
  Biodegradation: 99 %
  Exposure time: 5 d
  Method: OECD Test Guideline 302B

Zahn-Wellens Test
Concentration: 1,250 mg/l
Result: Readily biodegradable.
Biodegradation: 91 %
Exposure time: 1 d
Method: OECD Test Guideline 302B

Result: Readily biodegradable.
Biodegradation: 71 %
Exposure time: 5 d

**Bioaccumulative potential**

**Ingredients:**

**Acetic acid:**
Partition coefficient: n-octanol/water: log Pow: -0.31

**Alcian Blue:**
Partition coefficient: n-octanol/water: Remarks: No data available

**Mobility in soil**
No data available

**Other adverse effects**

**Product:**
Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

**Ingredients:**

**Alcian Blue:**
Adsorbed organic bound halogens (AOX): Remarks: Not applicable

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

Waste from residues: Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
Can be disposed as waste water, when in compliance with local regulations.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Component RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Acute Health Hazard

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcian Blue</td>
<td>75881-23-1</td>
<td>1.2 %</td>
</tr>
</tbody>
</table>

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>3 %</td>
</tr>
</tbody>
</table>
Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
- Acetic acid 64-19-7 3 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 117.3:
- Acetic acid 64-19-7 3 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307:
- Alcian Blue 75881-23-1 1.2 %

US State Regulations

Massachusetts Right To Know
- Acetic acid 64-19-7 1 - 5 %

Pennsylvania Right To Know
- Water 7732-18-5 90 - 100 %
- Acetic acid 64-19-7 1 - 5 %

New Jersey Right To Know
- Water 7732-18-5 90 - 100 %
- Acetic acid 64-19-7 1 - 5 %
- Alcian Blue 75881-23-1 1 - 5 %

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

- **CH INV**: On the inventory, or in compliance with the inventory
- **TSCA**: Not On TSCA Inventory
- **Alcian Blue**
- **DSL**:
  - This product contains the following components that are not on the Canadian DSL nor NDSL.
  - **Alcian Blue**
- **AICS**:
  - On the inventory, or in compliance with the inventory
- **NZIoC**: Not in compliance with the inventory
- **Acetic acid**
- **ENCS**:
  - Not in compliance with the inventory
  - **Water**
- **ISHL**:
  - On the inventory, or in compliance with the inventory
- **KECI**:
  - Not in compliance with the inventory
  - **Alcian Blue**
- **PICCS**:
  - Not in compliance with the inventory
  - **Alcian Blue**
- **IECSC**:
  - Not in compliance with the inventory
  - **Alcian Blue**
SAFETY DATA SHEET

ALCIAN BLUE FOR PAS

Version 1.2
Revision Date: 12-16-2015
Date of last issue: 12-14-2015
Date of first issue: 11-23-2015

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECl - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.